

What is claimed is:

1. A method for assembling an opto-electric module comprising at least one OSA having an optical axis, an optical end, an electrical end, and an electrical interface at said electrical end, a circuit board having electrical contacts, and a connector interface cooperating with said OSA such that an optical connector received in said connector interface is optically coupled to said OSA, said method comprising:

providing an assembly comprising said connector interface and a substrate having a cavity for receiving said OSA, said cavity being aligned with said connector interface such that, when the OSA is disposed in the cavity, the OSA is positioned to optically couple with a mating connector of an optical component connected to said connector interface;

affixing said circuit board to said substrate in a particular position relative to said cavity such that, when said OSA is disposed in said cavity, said electrical interface is positioned to electrically couple with contacts on said circuit board;

placing said OSA in said cavity; and

electrically connecting said electrical interface to said contacts after said OSA is disposed in said cavity and said circuit board is fixed to said substrate.

2. The method of claim 1, wherein said cavity is dimensioned to receive said OSA snugly so that the position of said OSA is defined within said module.

3. The method of claim 2, wherein said substrate is resilient and urges against said OSA when said OSA is placed therein.

4. The method of claim 3, wherein placing said OSA in said cavity comprises snapping said OSA into said cavity.

5. The method of claim 1, wherein said substrate comprises at least a second cavity.

6. The method of claim 1, wherein said substrate comprises a first structure to align said connector interface to said cavity.

7. The method of claim 1, wherein said substrate comprises a second structure to align said circuit board relative to said cavity.
8. The method of claim 7, wherein said second structure is an orifice adapter to receive a pin and said circuit board comprises an orifice to receive a pin, and wherein affixing said circuit board to said substrate comprises sequentially inserting a pin through an orifice of said circuit board and an orifice through said substrate.
9. The method of claim 1, wherein said OSA is placed in said cavity by first inserting said optical end thereof into said connector interface and then placing said electrical end into said cavity such that said electrical interface is urged against said circuit board.
10. The method of claim 1, wherein said OSA is one of either a receiving OSA or a transmitting OSA.
11. The method of claim 5, further comprising a second OSA wherein said second OSA is either a receiving OSA or a transmitting OSA.
12. The method of claim 1, wherein said electrical interface comprises electrical leads extending from said OSA essentially parallel to the optical axis of said OSA and a flexible circuit of electrical conductors extending orthogonally from said electrical leads.
13. The method of claim 12, wherein said circuit board has a top and bottom orientation when mounted on said substrate, said contacts being disposed on said top of said circuit board, and wherein said OSA is placed in said cavity such that said electrical conductors overlay said contacts.
14. The method of claim 13, wherein said conductors are resilient and are biased into said circuit board when said OSA is disposed in said cavity.

15. The method of claim 14, wherein said flexible circuit does not extend between said electrical leads and said contacts in a straight line.
16. The method of claim 15, wherein said circuit board is planar and parallel to said optical axis.
17. The method of claim 16, wherein said flexible circuit extends orthogonally from said electrical leads and bends around toward said circuit board.
18. The method of claim 13, where the position of said electrical conductors is adjusted with respect to said contacts after said OSA is placed in said cavity.
19. The method of claim 18, wherein the amount of overlap between said contacts and said electrical conductors is adjusted to control impedance.
20. The method of claim 1, further comprising attaching a cover to said substrate to contain and hold secure said OSA.
21. An opto-electric module comprising:
  - an OSA having an optical axis, and optical end, an electrical end;
  - a planar circuit board having top and bottom surfaces and one or more electrical contacts on at least one of said surfaces of said circuit board;
  - a connector interface for receiving a mating connector;
  - a substrate connected to said connector interface, said OSA and said circuit board, said substrate holding said circuit board parallel to said optical axis of said OSA; and
  - an electrical interface between said electrical end of said OSA and said electrical contacts of said circuit board, said electrical interface comprising a flexible conductor extending orthogonally from said optical axis of said OSA and bending around to overlay said electrical contacts on said circuit board.

22. The module of claim 22, wherein said substrate is attached to said optical connector and said circuit board by pins.
23. The module of claim 22, wherein said substrate and said optical connector are integrally molded.
24. The module of claim 22, wherein the OSA is either a receiving OSA or a transmitting OSA.
25. The module of claim 22, further comprising a second OSA, wherein said OSA is a receiving OSA and said second OSA is a transmitting OSA.
26. The module of claim 25, wherein said electrical interface comprises said electrical leads extending from said OSA essentially parallel to the optical axis of said OSA and said flexible circuit extending orthogonally from said electrical leads.
27. The module of claim 26, wherein said flexible circuit comprises electrical conductors which are resilient and are biased into said circuit board.
28. The module of claim 26, wherein said electrical contacts are located on said top surface of said circuit, said flexible conductor overlaying said electrical contacts on said top surface of said circuit board.
29. The module of claim 22, further comprising a cover attached to said substrate so that said OSA is covered.